

Remarks

Claims 1-10 are presently pending in the instant application. Claims 11-29 have been withdrawn. Claims 30-38 have been added. The specification has been amended to correct editorial oversights. Support for the new claims 30-38 can be found on page 3, lines 18-20 of the instant application.

The Examiner has objected to the specification. The specification has been amended to overcome these objections.

The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-7 under 35 U.S.C. 102(b) as being anticipated by Aumuller et al. (U.S. 5,714,611).

Aumuller discloses a process to prepare N,N'-bridged compounds (*see* col. 1, lines 7-9). These compounds can be prepared by reacting tetramethylpiperidine compounds with a cyclic carbonate (*see* col. 2, lines 50-60). This reaction can be carried out with a catalyst. The catalyst can be a sulfonic acid catalyst (*see* col. 6 lines 1-13). A polymer is not one of the catalyst components listed.

The Aumuller '611 patent does not disclose, and Applicants have not found a composition comprising both an acid component and a polymer.

The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-7 under 35 U.S.C. 102(b) as anticipated by or, in the alternative under 35 U.S.C. 103(a) as obvious over Aumuller (U.S. 5,914,360).

The Aumuller '360 reference discloses a process to prepare N,N'-bridged bistetramethylpiperidinyll compounds (*see* Aumuller '360, col. 1, lines 8-10).

This process can be carried out with a catalyst. The catalysts listed include sulfonic acid catalysts (*see* Aumuller '360, col. 6, lines 19-30). However, the catalyst does not contain a polymer, as required in the instant claims. Aumuller '360 does not disclose and Applicants have not found a catalyst containing a polymer or a catalyst useful for stabilizing polymers.

The Examiner states "Aumuller, et al. disclose an acid catalyst composition . . . , heavy metal catalysts . . . and organic catalysts . . . used in an amount from 0.01 to 25 mole percent and are used to stabilize alkyl acrylate copolymers, alkyl methacrylate copolymers and other polymers (col. 6, l. 1 – col. 7, l. 54; col. 8, l. 56 – col. 9, l. 17)." (*see* Office action, page 5, 3rd paragraph).

However, the compound Ia in the reference, (the structure of which is found in col. 7, lines 15-25) is a compound which can stabilize copolymers (*see* col. 9 lines 7-16). Compound Ia is one of the products made by the Aumuller '360 process. It would not be obvious to use the information in Aumuller '360 to deduce a catalyst containing both an acid and a polymer.

The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1 and 5 under 35 U.S.C. 102(b) as being anticipated by Hlatky (WO 01/81436 A1).

Hlatky discloses "polymerizing one or more olefins in the presence of a single-site catalyst, an optional activator, and an ionic liquid." (*see* Hlatky, page 3, 3rd paragraph). The single site catalyst is an organometallic complex with a Group 3 to 10 metal or a lanthanide or actinide metal (*see* Hlatky, page 4, 3rd paragraph). The

complex can also include polymerization-stable anionic ligands (*see* Hlatky, page 4, 4th paragraph).

Hlatky does not disclose, and Applicants have not found, a composition comprising an acid component and a polymer.

The Examiner is respectfully requested to reconsider and withdraw the rejections of claims 1 and 7 – 9 under 35 U.S.C. 102(b) as being anticipated by Stevens et al. (U.S. 2,258,368).

Stevens discloses an isobutylene extraction method by contacting isobutylene with sulfuric acid and warming the solution to produce polymerization. (See Stevens page 1, col. 1, lines 1 – 8). “As the polymer is formed it separates from the acid solution...” (Stevens, page 2, col. 1, lines 41 – 42).

Since the polymer is separate from the acid solution, Stevens does not disclose, and Applicants have not found, a composition comprising an acid component and a polymer.

Response to Response to Arguments

Aumuller '611

Aumuller '611 states "The novel compounds Ia as well as the compounds I and Ib are very suitable for stabilizing organic material to the effect of light, oxygen, and heat" (*see* Aumuller '611, col. 7, lines 48-50).

A catalyst, which can be a sulfuric acid catalyst, can be used to produce the compound I, which is the N,N'-bridged bistetramethylpiperidenyl compound with the formula as shown in col. 1, lines 10-16 of Aumuller.

Aumuller '611 further states that compound Ia is the compound which can stabilize polymers (*see* generally, Aumuller '611, col. 8, lines 56-67 to col. 9, lines 1-17). Compound Ia is a variation of compound I, and its formula is shown at col. 7 lines 1-8 of Aumuller '611. As is taught in general chemistry, a catalyst increases the rate of a reaction, but is not actually consumed in the reaction. Therefore, the sulfonic acid catalyst is *not* a part of the final reaction product Ia and is not present when Ia is used to stabilize polymers. Aumuller '611 does not disclose a composition containing an acid component and a polymer and Applicants argue that the Aumuller '611 reference has been misinterpreted to read otherwise.

The Examiner states "... it is well known in the chemical arts that it is difficult to impossible to completely remove all of the homogenous catalyst from the reaction product, and if this reaction product is added to a polymer, then there would be a composition comprising and [sic] acid and a polymer reading directly on the instant claims." (Office Action, page 5, 3rd paragraph). Applicants argue that the Aumuller reference, in disclosing the formulas of compounds I and Ia, eliminates any

reference to sulfuric acid. There is no evidence in the Aumuller reference that sulfuric acid is a part of composition Ia, either alone or when it is in contact with a polymer.

Aumuller '360

Since Aumuller '360 is a Division of Aumuller '611, Applicants submit that the arguments made above in regard to Aumuller '611 also apply to Aumuller '360.

Hlatky

Hlatky discloses a polymerization process performed in the presence of an ionic liquid (*see* page 6, line 3). This polymerization process is in the presence of a catalyst. The catalyst is an organometallic complex (*see* page 4, line 5). In Example 2 of Hlatky "polyethylene, the expected reaction product, collects on the surface of the ionic liquid and is easily isolated." (*see* page 10, lines 24-25). Applicants, therefore, argue that the two components are separate entities, and not a single composition is claimed in the instant claims.


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In view of the remarks herein, reconsideration and allowance of claims

1-10 and 30-38 is respectfully requested.

Respectfully submitted,

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